Development of Soil Screening Levels as Mandated by SB32

Ned Butler
Page Painter
Dave Siegel

Office of Environmental Health Hazard Assessment

Presentation Objective

- Describe the progress and plans regarding development of the screening levels under SB32.

Presentation Outline

1. Background
2. Differences between SB32 and RBSLs
3. UC Review
4. Proposed Efforts

What is SB32

- A bill that mandates Cal/EPA develop and publish screening concentrations to facilitate cleanup of Brownfield sites based on human health effects

Reason for Briefing

- We intend to do an expanded presentation to external interested parties
- Provide opportunity for executive staff to view proposed plan

What are RBSLs

- Risk Based Screening Levels (RBSLs) are soil concentrations that have been compiled by the San Francisco Bay Area for screen sites in that region
- SB32 identifies RBSLs as the starting point for developing screening levels

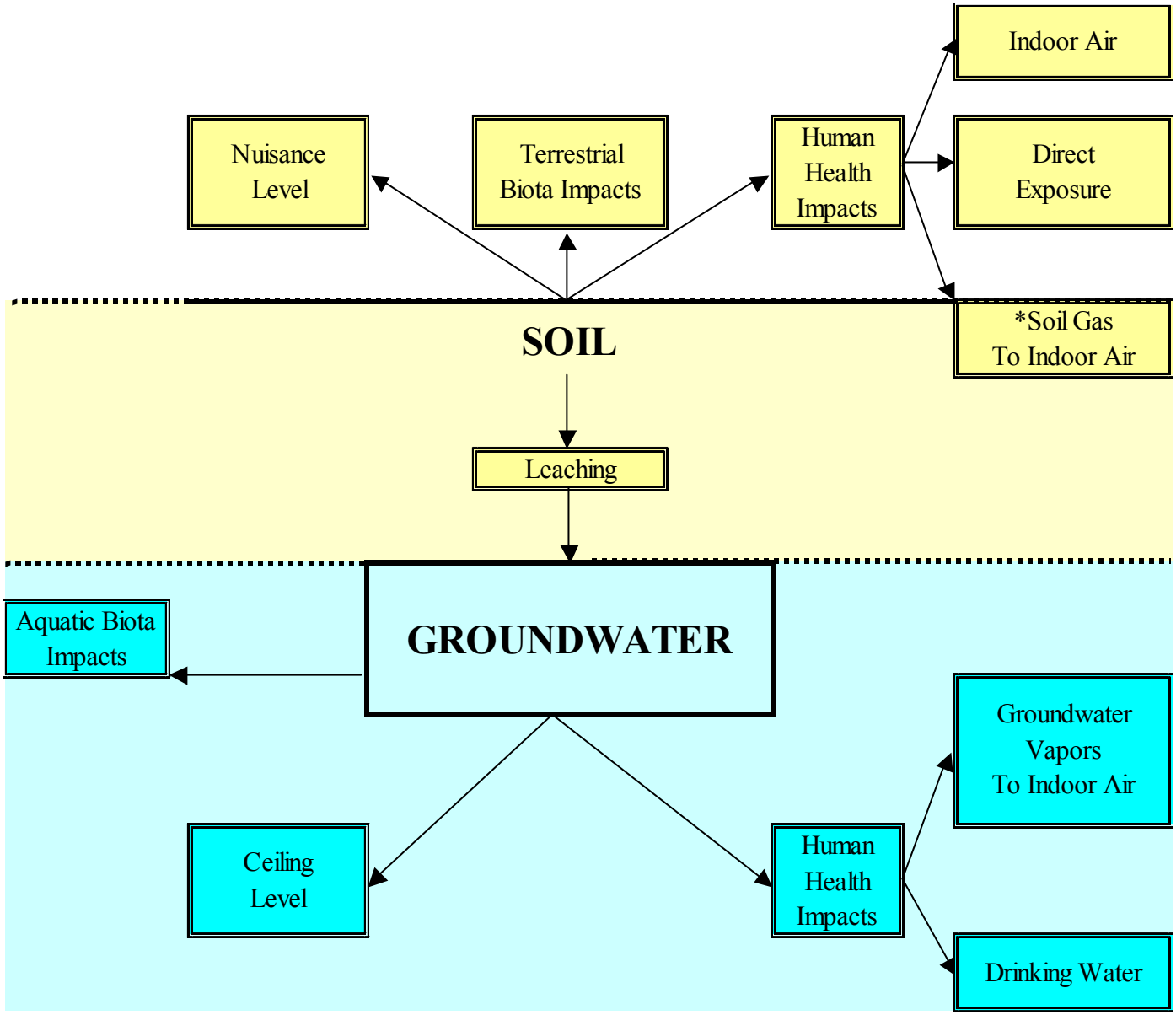


Figure 1. Scope of San Francisco Bay RWB screening levels. (*Soil gas screening levels to be used in place of soil screening levels for indoor air concerns in upcoming June 2003 edition.)

Existing Risk-Based Screening Level

Name	Final RBSL	Human Health		Soil Leaching	Urban Area Ecotoxicity Criteria	Ceiling Value
		Direct Exposure	Indoor Air Impacts	Drinking Water Resource		
Chemical 1	**15**	300	**15**	65	450	100
Chemical 2	**3.5**	140	600	-	**3.5**	500
Chemical 2	**0.036**	7.8	0.32	**0.036**	-	1000
Chemical 4	**4.4**	**4.4**	16	5.3	5.0	500

All tabled values are the Maxium Soil Concentration in mg of chemical per kg soil

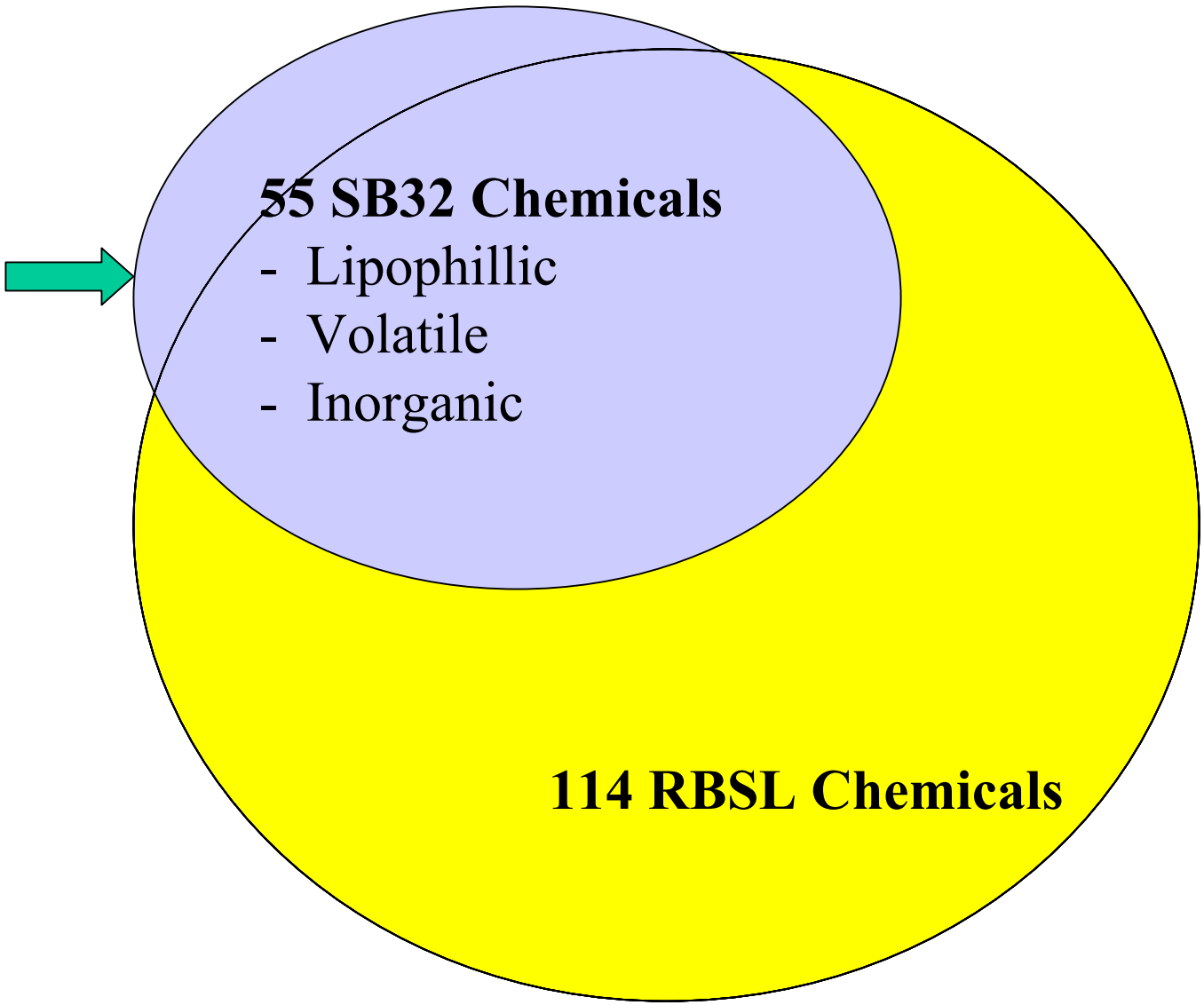
Differences between existing RBSLs and SB32 Soil Concentrations

- Different chemicals
- Whole State vs. Bay Area
- Different endpoints

Chemicals Named in RBSL Document and SB32

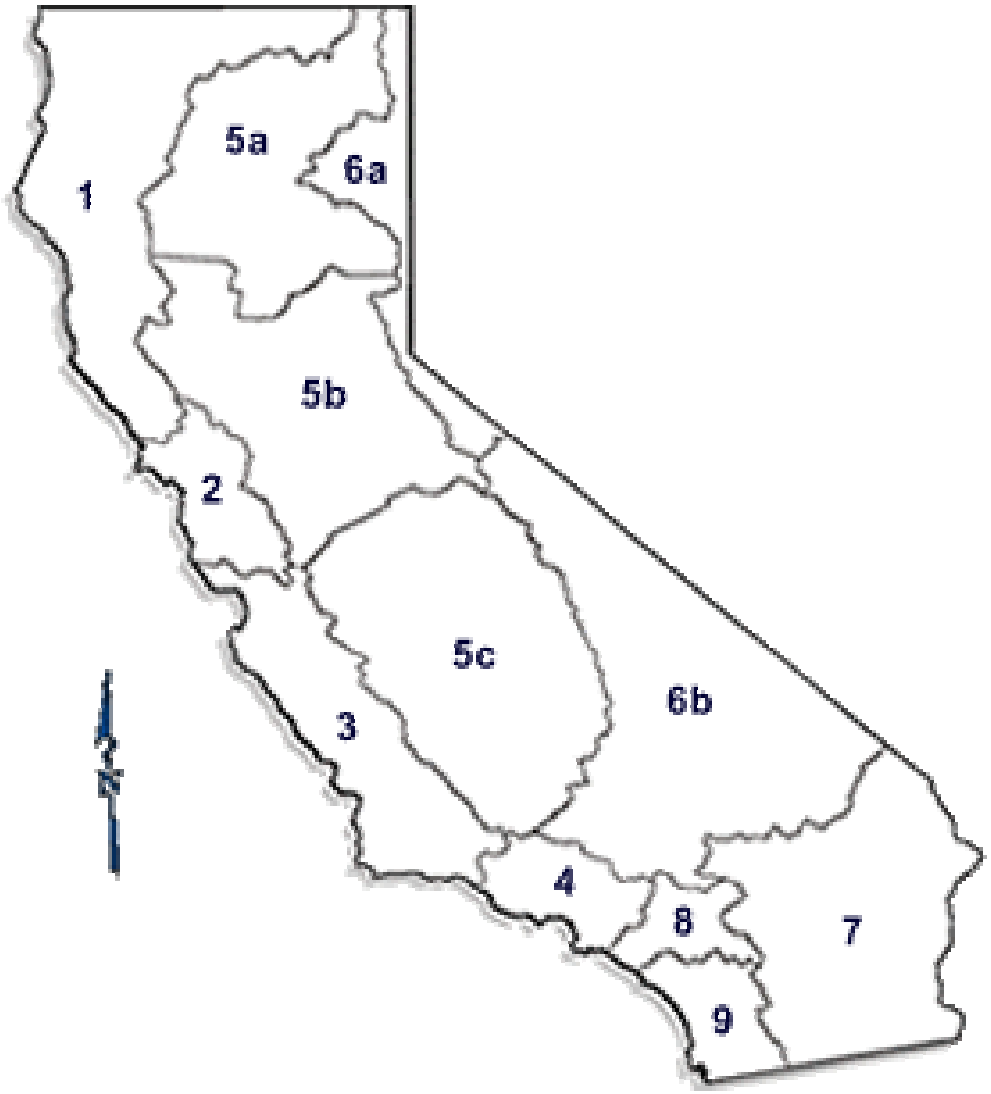
8 of 55 Chemicals Without RBSLs

Asbestos
2,4-D
2,4,5-T
Kepone
Mirex
Toxaphene*
Fluorine
Tetraethyl Lead



RBSLs were designed for RWQCB sites in Region 2

SB32 Levels will apply Statewide for all of Cal/EPA



Legislative Mandate

- OEHHA "shall publish a list of screening numbers … for the protection of human health and safety, and shall report on the feasibility of establishing screening numbers to protect water quality and ecological resources"

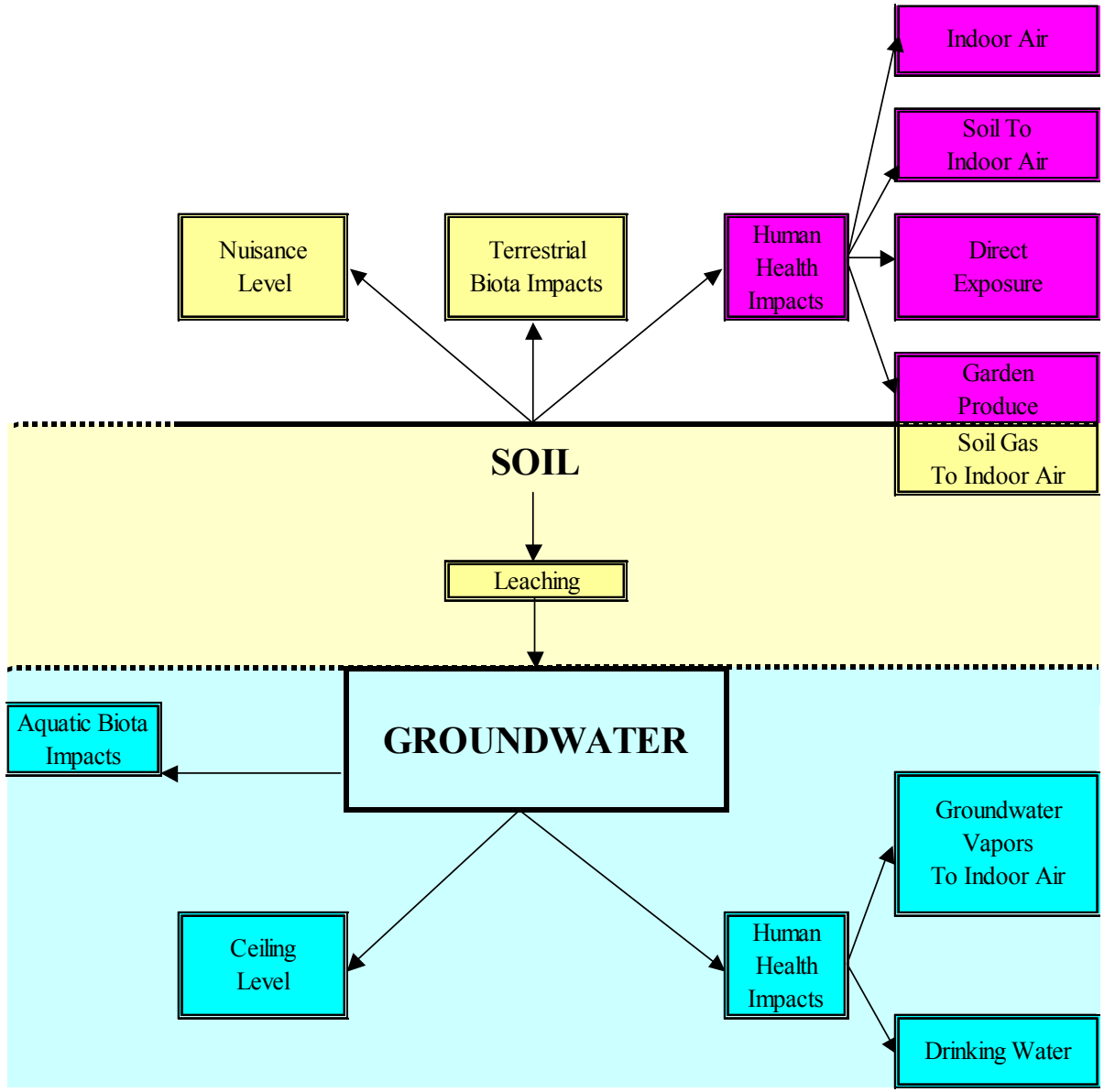


Figure 3. Focus of OEHHA study for SB32 (soil screening levels for human health concerns).

OEHHA to focus on Human Health

Name	Final RBSL	1 Ceiling Value	2 Urban Area Ecotoxicity Criteria	3 Human Health		4 Soil Leaching
				Direct Exposure	Indoor Air Impacts	Drinking Water Resource
Chemical 1	15	100	450	300 ca	**15**	65
Chemical 2	3.5	500	**3.5**	140 ca	600	-
Chemical 2	1000	**1000**	-	4100 sat	9800	-
Chemical 4	4.4	500	5.0	**4.4 ca**	16	5.3
Chemical 5	0.036	1000	-	7.8 nc	0.32	**0.036**

All tabled values are the Maxium Soil Concentration in mg of chemical per kg soil

SB32 directs OEHHA to review Human Health Soil Levels and assess the feasiblity of developing ecotox and soil leaching criteria by June 2004

Soil Levels for Unrestricted (residential) and restricted (commercial) land use must be presented by June 2004

Differences between existing RBSLs and SB32 Soil Concentrations

- SB32 adds eight chemicals
- SB32 applies to whole State
- SB32 has fewer endpoints

UC Review

- SB32 Mandates a UC review of the SF RWQCB Risk-Based Screening Levels
- OEHHA must consider this review in creating the mandated statewide list.
- http://www.swrcb.ca.gov/rwqcb2/rbsl.htm

UC Reviewer Comments on Issues of Human Health

- None of the 7 reviewers identified problems with direct exposure to soil
- Methods used for Indoor Air criticized by two UC reviewers
- One UC reviewer noted absence of backyard gardening scenario.

OEHHA's Proposed Effort

- Develop criteria for up to 54 chemicals (Asbestos will not be included) for an unrestricted land use (residential) and restricted land use (commercial)

OEHHA's Screen Values

	Residential Scenario			Commercial	
	Direct Contact	Indoor Air	Backyard Garden	Direct Contact	Indoor Air
Lipohillic	■		■	■	
Volatile chemicals	■	■		■	■
Inorganic chemicals	■			■	

OEHHA's Reports

- Feasibility of developing groundwater criteria
- Feasibility of developing ecotoxicity criteria

Timeline

- January- Make draft list of screening concentrations available on website
- February- hold a workshops in southern California and a second in northern California
- June- post final list